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Introduction

Librarians want to acquire relevant materials that are frequently used by library patrons. Achieving this goal is possible with an understanding of the types of sources used or cited by researchers in a particular field. A citation study can help the academic library select the most useful publications. Librarians can then use their budget effectively (Sandison, 1989).

The study of cited documents is known as citation analysis. Researchers use citations when beginning new research and in support of present findings or in contrast to them. Researchers can refer to basic articles to find and use relevant information. The process of selecting information from the references is based factors such as author's reputation, published work, and date of published work (Sandison, 1989).

Citation analysis describes formal patterns of scholarly communication, publications referred to as references, frequency of citation, and a variety of impact measures derived. Citation counting provides analysts with a convenient way of measuring impact (Cronin, 1991). Citation analysis shows that different fields of research need different types of references. Knowing about the citation patterns in various fields and disciplines will help librarians build library collections. Citation analysis is also a way to understand users. Studying references cited by your faculty or students shows the types of sources most commonly used and valued locally (Curtis 2005).

The library acquisition budget in Nigeria is generally inadequate and so the materials purchased will depend on cost. Therefore, the library needs a mechanism to ascertain the priority items to be purchased out of its numerous needs. To this end, determining the selection of publications that prove useful to users has been a growing concern to librarians. Normally a small number of relevant publications may prove more useful than a large number of general collections. Selecting the best resources will be made easier by library acquisition protocols. This study seeks to ascertain undergraduate students' citation behaviour, in two departments in Delta State University, Abraka. It is designed to assess the types/formats of resources preferred in their citations and their reasons for preferring a

particular format /type. The following research questions were raised to guide the study:

- What types of documents are preferred by undergraduate students in the two departments?
- What formats of documents are preferred by undergraduate students in the two departments?
- What are the students' reasons for preferring a particular type or format?

Methodology

Content analysis was done on the references in 50 copies of undergraduate project work each drawn randomly from the submitted undergraduate projects in the departments of Library and Information Science (LIS) and Physics. The result of the analysis was used to provide answers to research questions 1 and 2. A questionnaire, titled "Student Citation Behaviour Questionnaire" (SCBQ) was administered on the students of both departments to obtain information on their reasons for their preferences. Frequency counts and simple percentages were used to analyze data.

Review of Related Literature

Magrill and St. Clair (1990) found that, out of 1,775 undergraduate term papers across different disciplines, science students cited 65% journals and 21% books, while humanities students cited 19% journals and 68% books. Social science students were found to cite 57% books and 33% journals. Similarly, Kushkowski, Parsons, and Wiese's (2003) study of masters' and doctoral theses across five disciplines found biological students cited an average of 78% journal articles whilst arts and humanities students cited an average of 29% journals. Contrarily, Zainab and Goi's (1997) study of humanities masters' and doctoral dissertations found 61.4% of the citations were to books and book chapters. Bandyopadhyay and Nandi (2001) found books accounted for 56.2% of citations in political science doctoral theses. Similarly, Okiy (2003) found 60.3% of references in postgraduate education dissertations were to books.

Buttlar, (1999) in a study of library and information science doctoral dissertations found students cited an average of 46% journals, 31.9% books and 7.3% chapters in books (Buttlar, 1999) In contrast, Oppenheim and Smith (2001) found undergraduate information students cited fewer journals, 29.5%.

Zainab and Goi's (1977) study of masters' and doctoral dissertations where they observed a low 3.8% citation to government documents, 2.9% to conference papers, 0.8% to newspapers, and 6.2% to theses. Edwards (1999) also found that conference proceedings accounted for 1.8% of citations in doctoral dissertations and 5.9% of citations in masters' theses. Buttlar (1999) found 4.2% of citations to theses and dissertations, 2.2% to conference proceedings, and 2.1% to reports. Oppenheim and Smith's (2001) in their study of undergraduates found 11.2% of citations were to newspapers or reports. Gooden (2001) did a citation assessment of doctoral dissertations accepted at the chemistry department of Ohio State University and reported that journal articles were cited more frequently than monographs and other sources. Bandyopadhyay and Nandi (2001) in their study found that 9.5% of citations in doctoral theses were to report literature.

De Groote and Dorsch (2001) found that there is a significantly reduced use of print journals following the introduction of online journals, including decreased use of print journals for which there was no online equivalent. More recent studies have found higher numbers of citations to electronic sources. A study by Fescemyer on undergraduate geography student citation found electronic sources to account for 36% of the citations in 1997 and 47% in 1998 (Fescemyer, 2001). Contrarily, Malone and Videon (1997) examined undergraduate bibliographies and only 7% of citations were found to be electronic, although they asserted that there were some further sources used that might have been electronic.

Pascoe, Applebee, and Clayton, (1996) observed that ease, convenience, and accessibility

were major factors influencing academic electronic/Internet use as a source for scholarly materials. Bell, (1998) described students as 'web-centric', due to their preference for searching the Internet when seeking information. Schaffer (2004) found that Less than one-third of the articles cited in his study were available online. Guedon (2004), reported that the Open Access Publishing movement is encouraging journals to publish on the Web, with access for all, unhindered by subscriptions and the physics community, influenced by this development has been disseminating non-peer reviewed pre-publication research results online since 1991, on the arXiv site (http://arxiv. org).

A survey at the University of Illinois at Urbana-Champaign reported increased overall journal use with the addition of electronic journals, along with a decline in the use of some, but not all print titles (Chrzastowski 2003). Sathe, Grady & Giuse (2002) reported that students prefer to use electronic journals due to its ease of access and access from home.

Research Question 1: *What are the preferred types of documents used by the undergraduate students in the two Departments?*

The results of the analysis is presented in figure 1

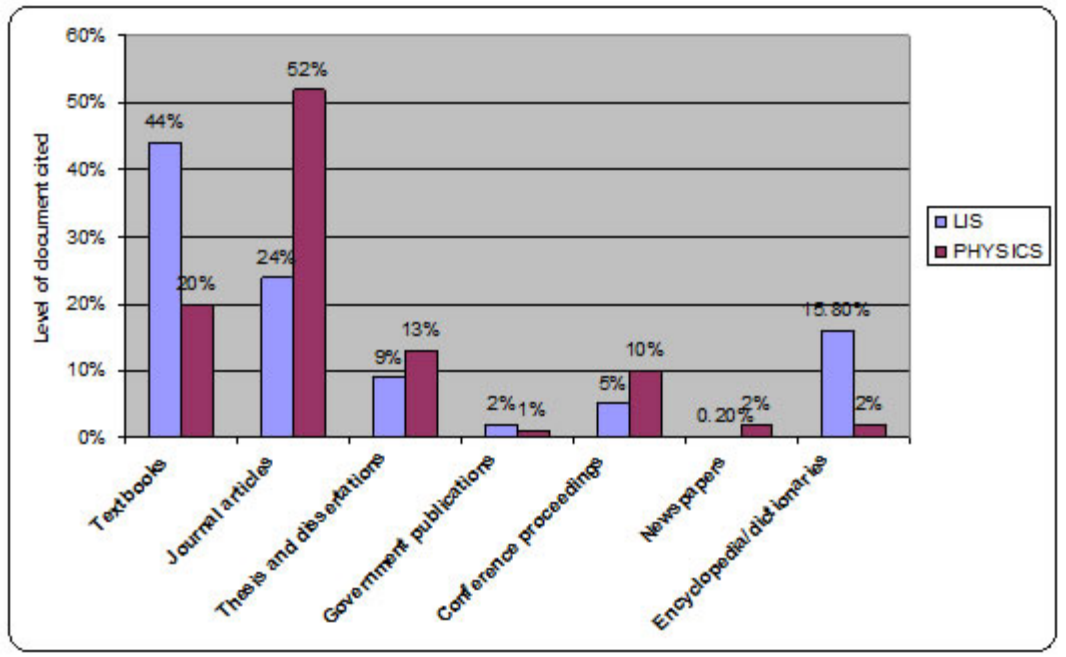

Figure 1. Analysis of preferred types of documents used

Analysis revealed that a majority of 44% LIS students cites more of books in contrast to 40% from Physics. Contrarily, fewer LIS students i.e. 24% cites journal articles in contrast to majority of Physics students i.e. 52% that prefers citing journal articles. This corroborates Magrill and St. Clair (1990) who in their study found that of 1775 undergraduate term papers across different disciplines, science students cited 65% journals and 21% books, while humanities students cited 19% journals and 68% books. Social science students were found to cite 57% books and 33% journals. Similarly, Kushkowski, Parsons and Wiese's (2003) study of masters' and doctoral theses across five disciplines found biological students cited an average of 78% journal articles whilst arts and humanities students cited an average of 29% journals. In contrast, Zainab and Goi's (1977) study of humanities masters' and doctoral dissertations found 61.4% of the citations were to books and book chapters. Bandyopadhyay and Nandi (2001) found books accounted for 56.2% of citations in political science doctoral theses. Similarly, Okiy (2003) found 60.3% of references in postgraduate education dissertations were to books.

Buttlar, (1999) in a study of library and information science doctoral dissertations found students cited an average of 46% journals, 31.9% books and 7.3% chapters in books. In contrast, Oppenheim and Smith (2001) found undergraduate information students cited

fewer journals, 29.5%.

It was also observed that students from the two departments cite fewer theses and dissertations, government publications, conference proceedings, newspapers, encyclopedias and dictionaries. The low preference for these sources corroborates Zainab and Goi's (1977) study of masters' and doctoral dissertations where they observed a low 3.8% citation to government documents, 2.9% to conference papers, 0.8% to newspapers, and 6.2% to theses. Edwards (1999) also found that conference proceedings accounted for 1.8% of citations in doctoral dissertations and 5.9% of citations in masters' theses. Buttlar (1999) found 4.2% of citations to theses and dissertations, 2.2% to conference proceedings, and 2.1% to reports. Oppenheim and Smith's (2001) in their study of undergraduates found 11.2% of citations were to newspapers or reports. And Bandyopadhyay and Nandi (2001) in their study found that 9.5% of citations in doctoral theses were to report literature.

Research Question 2: *What are the preferred formats of documents used by the undergraduate students of the two departments?*

The results of the analysis is presented in figure 2

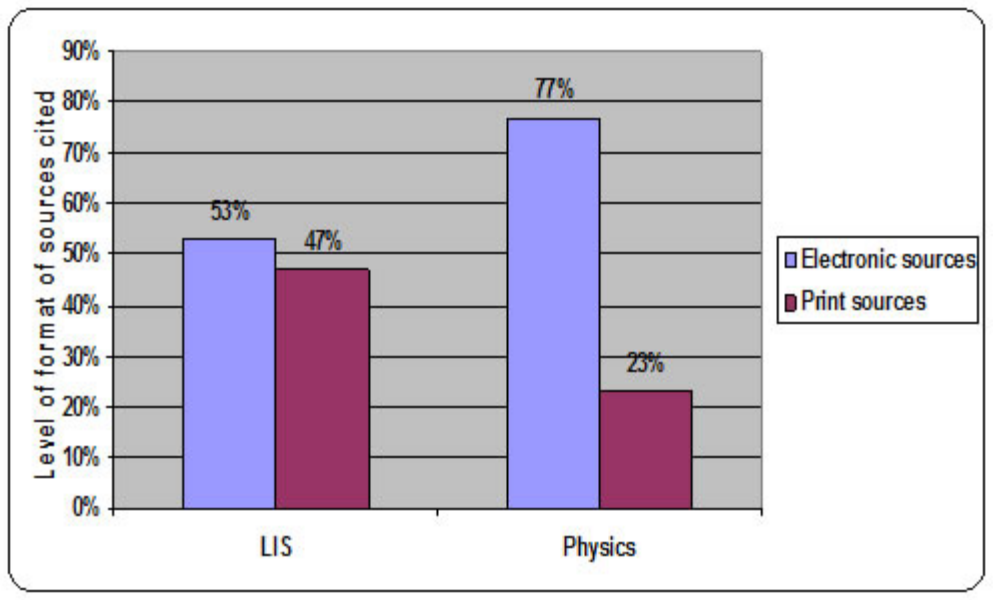

Figure 2. Analysis of preferred format of documents used

The analysis revealed a high frequency of electronic format preference to print format. According to De Groote and Dorsch (2001) there is a significantly reduced use of print journals following the introduction of online journals, including decreased use of print journals for which there was no online equivalent. More recent studies have found higher numbers of citations to electronic sources. A study by Fescemyer on undergraduate geography student citation practice found electronic sources to account for 36% of the citations in 1997 and 47% in 1998 (Fescemyer, 2001). Contrarily, Malone and Videon (1997) examined undergraduate bibliographies and only 7% of citations were found to be electronic, although they asserted that there were some further sources used that might have been electronic.

Research Question 3: *what are the reasons for preferring a particular format?*

The result of the analysis is presented in table 1.

Table 1 Analysis of reasons for preferring the format selected in research question 2

	Preferred Document Format	
	Print Format	Electronic Format

S/N	Items	Options	Frequency	Percentage	Frequency	Percentage
1.	The format is user-friendly	Strongly Agreed	-	-	-	-
		Agreed	100	80.6%	66	76.7%
		Disagreed	24	19.4%	20	23.3%
		Strongly Disagreed	-	-	-	-
2.	I can find information quickly through the format	Strongly Agreed	24	19.4%	76	88.4%
		Agreed	60	48.4%	10	11.6%
		Disagreed	40	32.2%	-	-
		Strongly Disagreed	-	-	-	-
3.	The format is more readily available to me	Strongly Agreed	60	48.4%	-	-
		Agreed	40	32.2%	36	41.8%
		Disagreed	24	19.4%	40	46.6%
		Strongly Disagreed	-	-	10	11.6%
4	It is cheaper to use the format	Strongly Agreed	124	100.0%	-	-
		Agreed	-	-	-	-
		Disagreed	-	-	10	11.6%
		Strongly Disagreed	-	-	76	88.4%
5	I feel satisfied using the format	Strongly Agreed	14	11.3%	10	11.6%
		Agreed	60	48.4%	76	88.4%
		Disagreed	40	32.2%	-	-

		Strongly Disagreed	10	8.1%	-	-
6	I feel at ease using the format	Strongly Agreed	124	100.0%	76	88.4%
		Agreed	-	-	10	11.6%
		Disagreed	-	-	-	-
		Strongly Disagreed	-	-	-	-
7	I am not disappointed whenever I use the format	Strongly Agreed	40	32.2%	36	41.8%
		Agreed	60	48.4%	40	46.6%
		Disagreed	24	19.4%	10	11.6%
		Strongly Disagreed	-	-	-	-
8	It am at ease with the technicalities involved	Strongly Agreed	124	100.0%	36	41.8%
		Agreed	-	-	40	46.6%
		Disagreed	-	-	10	11.6%
		Strongly Disagreed	-	-	-	-
9	I am confident in completing assignments through the format	Strongly Agreed	14	11.3%	66	76.8%
		Agreed	60	48.4%	10	11.6%
		Disagreed	40	32.2%	10	11.6%
		Strongly Disagreed	10	8.1%	-	-
10	The format can satisfy my educational needs	Strongly Agreed	10	8.1%	66	76.8%
		Agreed	60	48.4%	20	23.3%
		Disagreed	40	32.2%	-	-

		Strongly Disagreed	14	11.3%	-	-
11	I can use the format to get supplementary materials for class work, project etc.	Strongly Agreed	114	91.9%	86	100.0%
		Agreed	10	8.1%	-	-
		Disagreed	-	-	-	-
		Strongly Disagreed	-	-	-	-

Table 1 shows that a majority of students who preferred print or electronic materials agreed that both formats are user-friendly and readily available this corroborates Pascoe, Applebee, and Clayton, (1996) where the observed that ease, convenience, and accessibility were major factors influencing academic Internet use as a source for scholarly materials. Moreso, Bell, (1998) described students as 'web-centric', due to their preference for searching the Internet when seeking information.

Furthermore, for respondents who opted for electronic format a majority of 50 (88.4%) claimed that though they prefer electronic format but the format is not readily available. This corroborates Schaffer (2004) where he found that Less than one-third of the articles cited in his study were available online.

Guedon (2004), reported that the Open Access Publishing movement is encouraging journals to publish on the Web, with access for all unhindered by subscriptions and the physics community, influenced by this development has been disseminating non-peer reviewed pre-publication research results online since 1991, on the arXiv site (http://arxiv.org).

Conclusion

The study shows that LIS students cite more textbooks than any other type of resources, in contrast to physics students who of journal articles. The students of both departments exhibit a strong preference for electronic format over print. The preferred formats is readily available, user-friendly, and easily accessible, which account for their preference.

The university and the library should make their resources available electronically. The university must put a structure in place that will allow for easy accessibility and availability of both electronic and print formats.

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